



V.  
strategic investments to  
achieve regional goals

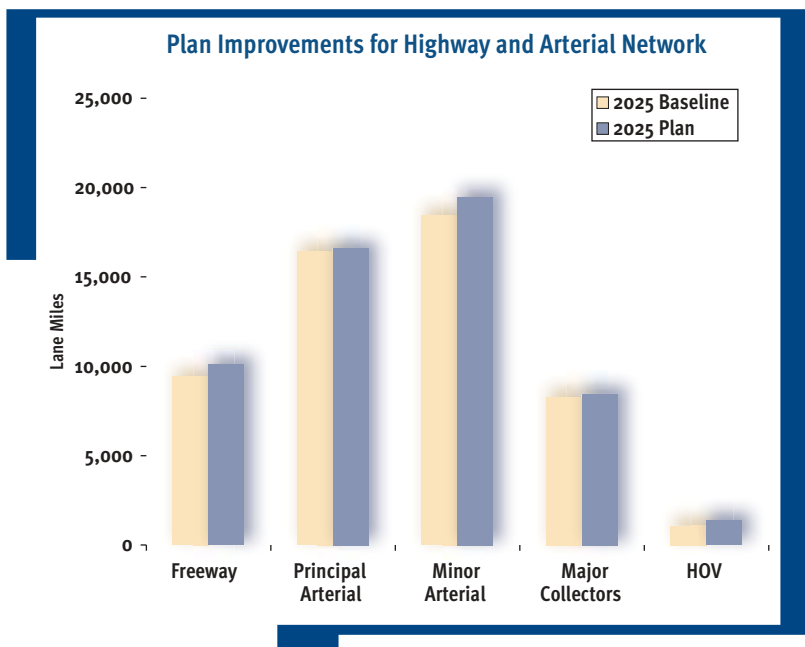
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## INTRODUCTION — OVERVIEW OF THE FUTURE REGIONAL TRANSPORTATION SYSTEM

Although the Region will be experiencing dramatic population and employment growth over the next 25 years, relatively little new funding may be expected for new highway construction or additional public transit if we fail to maintain the historical purchasing power of transportation revenues. Even with new strategies, the Region will be hard pressed to maintain the existing transportation system and target its remaining resources to the best-performing investments.

**Figure 5.1**



The Region has a massive transportation infrastructure, and regional agencies are committed to improving this system to meet the challenge created by continued population growth, employment growth and economic growth. Figure 5.1 summarizes the increase in highway network lane miles that would result from the implementation of the 2001 RTP over the Baseline by 2025. HOV lanes and rail will continue expanding, but the other facilities, though expanding slightly, will not keep pace with the expected 40 percent population growth.

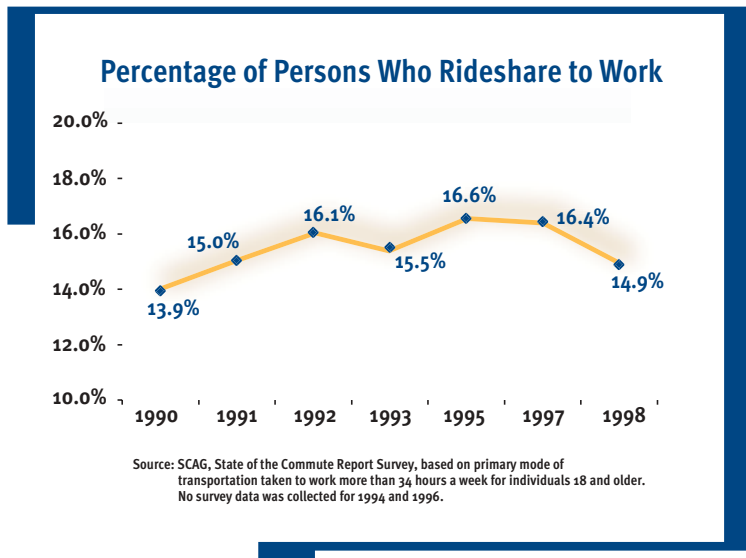
With the major congestion and air quality problems projected, it is critical that the \$24.3 billion identified for new projects in the Regional Checkbook (assuming the availability of new revenues) be spent on those that perform best. Exhibits 5.1 and 5.4 graphically indicate the levels of congestion that the Region experiences today and estimates of what the Region may face in the year 2025.

A comparison of the 1997 Baseyear map congestion with the 2025 Baseline congestion tells the following story:

- ▶ In 1997, 12 percent of the total freeway system was extremely congested during the peak hour. By 2025, estimates are that 26 percent will be extremely congested.
- ▶ In 1997, 18 percent of the average driver's time was spent driving in "stop and go" congested conditions. In 2025, based upon projections, that time will increase to 25 percent.
- ▶ Peak hour speed on some of the most congested freeways could deteriorate to less than 16 miles per hour in 2025.

Both HOV lanes and transit will play important roles in the future of the regional transportation system, but both of these critical elements face continuing challenges. Although lane miles for HOV have and will continue to increase

Figure 5.2



Ridership has just now reached the peak levels experienced in 1985. In a study of the Los Angeles County Metropolitan Transportation Authority (LACMTA), SCAG found that 20 percent of the MTA bus lines carry 60 percent of the total ridership. At the same time, the study showed 20 percent of the lowest performing transit lines carry only 10 percent of the trips. Use of these low-performing bus lines raises the question of whether they are the most cost-effective way of providing transportation services. Is there a more efficient and less expensive way of providing transportation for people who rely on public transit but are now contending with a service that may be infrequent and inconvenient? Given these challenges, the Region needs to find ways to improve service and meet its mobility and air quality goals.

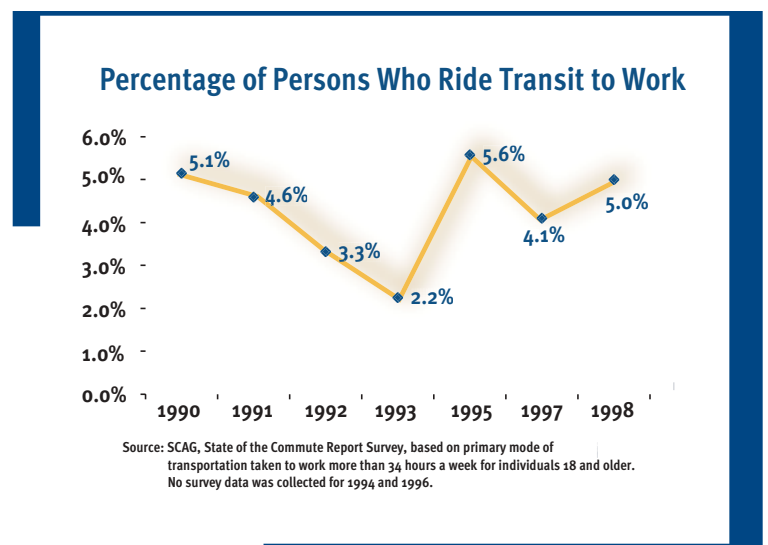
## TRANSPORTATION SYSTEM SETTING

The Metropolitan Transportation System (MTS), which consists of existing multi-modal facilities having regional and national significance, is the backbone of our regional transportation system. The MTS can be broadly categorized into roadway network, transit network and the Goods Movement network. The MTS roadways include freeways, regionally significant state highways and arterials, as well as currently approved congestion management plans. The MTS transit component includes commuter rail network, inter-city rail system and the urban rail system, including the light rails and the subway. The Goods Movement component of MTS includes rail freight corridors and major truck routes using the freeways and regionally significant

(by over 80 percent), the percentage of people who rideshare to work appears to fluctuate between 14 to 16 percent from 1990 through 1998 (see Figure 5.2). While the HOV lanes are utilized at 60 to 95 percent of capacity during peak periods, they are primarily being used by two-person cars, some three-person vehicles and some larger vehicles. Given the significant financial investment planned for HOV projects, it is important to assure that there is maximum use of HOV lanes by carpools and by vans and buses that can efficiently and effectively move larger numbers of people.

Transit ridership had been declining previous to 1995 (see Figure 5.3). The introduction of new rail facilities and local bus operations growth has boosted overall transit use.

Figure 5.3



state highways and arterials. The primary purpose of MTS is to distinguish the locally important facilities from those strategically significant at the regional and national level. There is a federal requirement to develop long-range plans that emphasize facilities for serving regional and national functions. Such differentiation clarifies the issues so that the concepts can be directly applied to planning and policy issues having inter-county, interstate and international implications.

In addition to the components identified under the MTS network, our regional transportation system includes minor arterials, major collectors in the roadway category, fixed route transit and other para-transit systems in the transit category, systems of airports and seaports and the non-motorized transportation network which includes bikeways and pedestrian walkways. The following is a description of the current state of the various components of our regional transportation system.

**Table 5.1**

<b>HIGHWAY AND ARTERIAL NETWORK (LANE MILES)</b>	
<b>Facility</b>	<b>1997</b>
<b>Freeway</b>	8,906
<b>Principal Arterial</b>	14,998
<b>Minor Arterial</b>	17,605
<b>Major Collectors</b>	8,262
<b>HOV</b>	582

## **HIGHWAYS AND ARTERIALS**

Regional and local roads are an integral part of the Region's infrastructure. The vast majority of trips rely on the highway network, either for automobiles, buses, van-pools, trucks or, in many cases, even bikes. In fact, 99 percent of all trips, including trips on buses, occur on the highway and arterial network. The regional and local highway system faces mounting congestion that affects personal mobility, freight movement and air quality. The preservation, management and selective expansion of this system are crucial to the Region's economic vitality and the quality of life for the Region's residents.

In the current system, there are over 9,000 lane miles of freeway and High-Occupancy Vehicle (HOV) lanes linking the Region. Additionally, there are 32,600 lane miles of major and minor arterials. These roadways are an integral part of the transportation system, often acting as alternative routes to freeway driving. (See Table 5.1, which summarizes the key components of the Region's Highway and Arterial Network.)

Currently, there are approximately 580 lane miles of completed HOV system in the Region. Most of the HOV system is open to vehicles with two or more occupants. The exceptions are the HOV lanes on the I-10 (El Monte Busway), which require vehicle occupancy of three or more persons during peak periods. When the Plan is fully implemented, the regional HOV system will have about 1,400 lane miles of HOV facility.

In recent years a number of toll roads have been added to the transportation system mix. All of these new toll roads are privately funded:

- ▶ SR 91 Express Lanes, Orange County
- ▶ SR 73 San Joaquin Hills Transportation Corridor, Orange County
- ▶ SR 241 Foothill/Eastern Transportation Corridor, Orange County Regional Transit

## REGIONAL TRANSIT

Southern California contains a vast transit network comprised of several modes of public transportation. The largest of the transit networks and backbone of the system is express and local bus service. This service provides an alternative to the auto as a means for people to get to and from work as well as make discretionary trips. The fixed guideway network includes interregional, commuter, urban and light rail. Local service is coordinated with rail service to create seamless transit and help increase overall transit trips. Public transit service is provided by a multitude of separate public agencies. Ten of these agencies provide 96 percent of the existing public bus transit service. In 1999, ridership approached 590 million annual passengers. This upward trend may be credited to new urban rail system service expansions and technology advancements made to some fixed routes. Despite this trend, transit ridership for all trips accounted for only 2 percent of total trips and less than 4 percent of home-to-work trips.

LACMTA, which provides approximately 70 percent of the total trips for the Region, continuously struggles to maintain low operating costs for public transit in Los Angeles County. In the fall of 2000, bus and rail operators went on strike for nearly six weeks, leaving Los Angeles

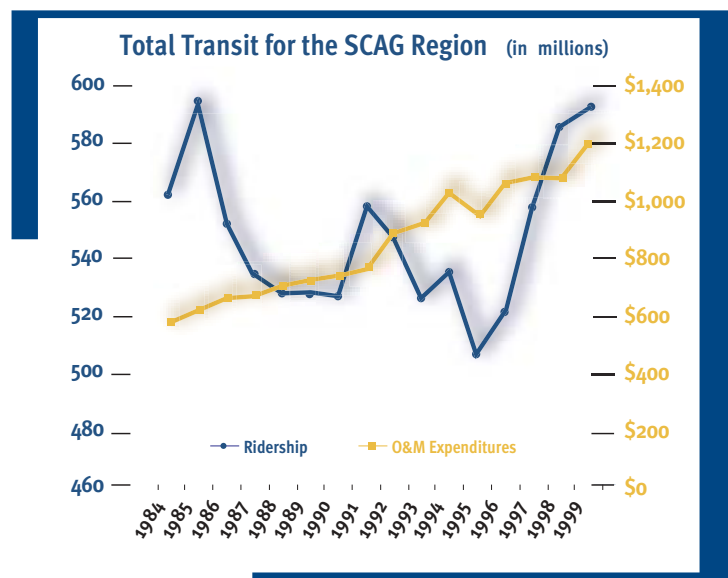
County with very limited public transportation. Municipal bus operators expanded service to help provide the public with some means of commuting to and from work. The strike ended in mid-October and resulted in an agreement that would help ensure the long-term financial viability of the LACMTA.

Many of the municipal operators in Los Angeles County have seen substantial growth in ridership and have managed to control costs to operate and maintain their systems. However, these smaller operations do continue struggling with securing operating funds that will allow them to provide efficient service to the growing population.

## Urban Rail

LACMTA's urban rail lines operate seven days a week. During peak periods, trains are available every five minutes and off-peak, every twenty minutes. Existing urban rail lines are located in Los Angeles County, including the Blue Line from Long Beach to Downtown and the Green Line from El Segundo to Norwalk and the Red Line subway, which as of mid-2000 terminates in North Hollywood. Ridership on the Red, Green and Blue Lines exceeded 39 million annual passenger trips in 1999.

Figure 5.4





# 1997 Base Year Freeway Congestion



## 1997 Base Year Freeway Congestion

- Port
- Port of Entry
- Airport / Potential Airport Site

The SCAG Region  
2001 RTP

## Congestion Delay (AM Peak Period)

- 0.0% - 25%
- 25% - 50%
- 50% - 75%
- 75% - 100%
- MTS

## Exhibit 5.1



### **Commuter Rail / Interregional Rail**

Commuter rail services are operated by the Southern California Regional Rail Authority (SCRRA). In October of 1992, the SCRRA began initial operation of the Metrolink commuter rail system consisting of three lines. Service on the initial system was greatly expanded following the 1994 Northridge earthquake. Currently, SCRRA operates six lines with an approximate weekday ridership of 31,000 trips. Additionally, Amtrak provides inter-city service, principally between San Diego and San Luis Obispo.

### **Shuttles and Circulators**

When SCAG's Regional Council adopted the 1998 RTP, staff was directed to work with transit providers to determine how to best meet the objectives identified in the Plan. The Plan proposed that substantial service improvements and significant cost reductions could be achieved by implementing regional Smart Shuttle services (on-demand service supported by technology enhancements). The RTP projected that the 20-year savings from Smart Shuttle services and other transit system changes could be as high as \$2.65 billion.

Upon review of the Smart Shuttle progress to date, a significant promise that innovative services can increase the transit mode split can be seen. However, the assumptions of the 1998 RTP were overestimated and the "third tier" transit goals have been scaled back and adjusted for the 2001 RTP.

Service, such as DASH, Pasadena ARTS, Glendale Bee Line, Cerritos on Wheels, El Monte Transit and a host of local Dial-a-ride operations and Smart Shuttle demonstrations represent the implementation of third tier transit services. Cities within Los Angeles County fund services through local transportation sales tax returns, but cities in other counties lack this funding source. Exhibit 5.2 depicts existing fixed grade transit corridors in the Region.

### **MARINE PORTS**

Southern California is served by three major seaports that are responsible for providing a major link between the West Coast of the United States and the Pacific Rim countries. These ports—Hueneme, Long Beach and Los Angeles—serve over 80 ocean carriers, the two major railroads and almost every trucking company in Southern California. The Port of Hueneme, with its recent expansion, ranks as one of the premier automobile and agricultural product handling facilities in California. The Ports of Long Beach and Los Angeles are full-service ports with facilities for marine containers, autos and various bulk cargo. With an extensive landside transportation network, these three ports moved more than 120 million tons of cargo in 1995.





In particular, the San Pedro Bay Ports (Long Beach and Los Angeles) dominate the container trade in the Americas by shipping and receiving more than 5 million containers annually. Together, these two ports rank third behind Rotterdam and Hong Kong in world sea trade.

### RAIL FREIGHT AND TRUCKING

The SCAG Region is served by two main line railroads—the Burlington Northern and Santa Fe Railway Co. (BNSF) and the Union Pacific Railroad (UP). These railroads link Southern California with other U.S. regions, Mexico and Canada either directly or via their connections with other railroads. They also provide freight rail service within California. In 1995, these railroads moved more than 91 million tons of cargo in and out of Southern California.

The SCAG Region is also served by three short line or switching railroads:

- ▶ The Pacific Harbor Line (formerly the Harbor Belt Railroad), which handles all rail coordination involving the Ports of Los Angeles and Long Beach, including dispatching and local switching in the harbor area.
- ▶ The Los Angeles Junction Railway Company, owned by BNSF, which provides switching service in the Vernon area for both the BNSF and UP.
- ▶ The Ventura County Railroad, owned by Rail America, Inc., which serves the Port of Hueneme and connects with the UP in Oxnard.

These railroads perform specific local functions and serve as feeder lines to the trunk line railroads for moving goods to and from Southern California.

The two main line railroads also maintain and serve major facilities in the SCAG Region. Intermodal facilities are located in Commerce (BNSF), East Los Angeles (UP), San Bernardino (BNSF) and Carson near the San Pedro Bay Ports (UP), and provide on-dock and near-dock container transfer from the Ports of Los Angeles (UP/BNSF) and Long Beach (UP/BNSF) as well as transfer of domestic truck trailers onto trains. Major classification yards are located in Barstow (BNSF), East Los Angeles (UP), Commerce (BNSF), Industry (UP) and West Colton (UP), and auto loading facilities are found in Ontario (UP) and San Bernardino (BNSF).

The trucking industry, including common carrier, private carrier, contract carrier, drayage and owner-operator services, handles both line-haul and pick-up and delivery. In addition to using the public highway system for over-the-road and local service, the industry is served by a considerable infrastructure of its own. This includes truck terminals, warehousing, consolidation and trans-loading facilities, freight forwarders, truck stops and maintenance facilities. These facilities are especially concentrated in the South Bay and Gateway Cities areas, including Wilmington and Carson and extending generally between LAX and the San Pedro Bay ports, along the 710 Corridor north to Vernon, Commerce and Downtown Los Angeles; east through the San Gabriel Valley to Industry, Pomona and Ontario; and thence to the Inland Empire in Fontana and Rialto. Truck related facilities are also located in Glendale, Burbank and Bakersfield. Specialized facilities for trucking that provide air cargo ground transport are located around regional airport facilities, notably LAX and Ontario.

### REGIONAL AVIATION SYSTEM

The SCAG Region has 65 airports, including six commercial service airports, 45 general aviation, 11 existing or recently closed military air bases, two limited commercial service airports and one joint-use facility. Six commercial service airports handle the majority of passenger air traffic: Burbank, John Wayne/Orange County, Long Beach, Los Angeles International, Ontario International and Palm Springs. Limited commercial service exists at Oxnard and Imperial County airports.

In all, some 80 million annual passengers (MAP) were served in the Region in 1997, double the number served in 1980. The level of air passenger demand is forecast to more than double again before 2025. While none of the individual airports is the largest in the U.S., the Region's airports taken together make Southern California the busiest of all regions in the country.

Air cargo is the fastest growing method of transporting goods in and out of the Region and is expected to continue to increase faster than passenger demand. Los Angeles International and Ontario International are the major cargo hauling airports, handling about 96 percent of all regional air cargo, with LAX alone accounting for 78 percent of the traffic. The impact on ground transportation of freight movement to and from the airports is significant, but possible conversion of several military airports to commercial use may spread this burden more evenly.



To better meet the aviation needs forecasted for the Region, the 1998 RTP developed various aviation policies, principles and action steps. In particular, Policy Nos. 8, 18, 19 and 20 in the 98 RTP pertained to aviation.

### TRANSPORTATION DEMAND MANAGEMENT (TDM)

Transportation Demand Management (TDM) is the all-inclusive term given to a variety of measures used to improve the efficiency of the existing transportation system by managing travel demand. Travel behavior may be influenced by mode, reliability, frequency, route, time and costs, support programs/facilities and education. TDM strategies encourage the use of alternatives to the single occupant vehicle such as carpools, vanpools, bus, rail, bikes and walking (for purposes of the RTP, transit and non-motorized strategies are separated out). Alternative work hour programs such as compressed work-week programs, flextime and telecommuting (teleworking) are also TDM strategies, as are parking management tactics such as preferential parking for carpools and parking pricing.

# 2000 Commuter Rail, Urban Rail and Rapid Bus System





### Carpools

Carpooling is currently the number one alternative to driving alone in the Los Angeles area. As of the 1990 Census, carpooling moved three times more workers each workday than transit (1,057,051 vs. 310,616). Among the ten largest metropolitan areas in the country, according to the 1990 Nationwide Personal Transportation Study, the greater Los Angeles area has the highest carpooling rate in the nation. In addition, Los Angeles is the only major metropolitan area in the nation where carpooling has been maintaining its relative market share.

### Jitney Service

The 1998 RTP assumed the use of Smart Shuttles, local circulators and jitney services to replace existing less efficient bus routes. A jitney service can best be described as an on-demand personal transit service. This type of service is common in Middle Eastern, Asian, African and South American cities where bus or rail alternatives are impractical or non-existent.

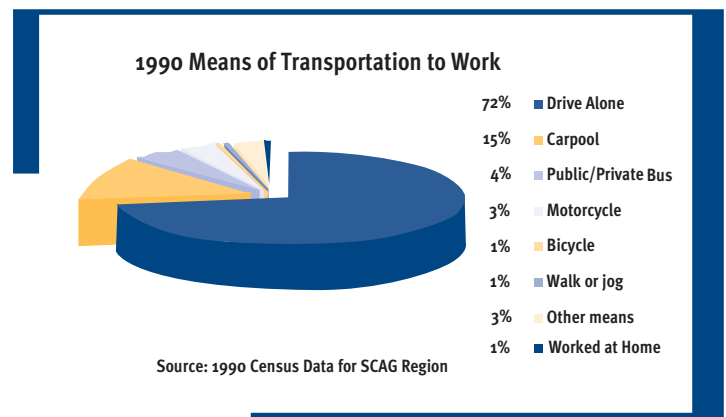
In the SCAG Region, a number of demonstration projects have produced mixed results as to the viability of personal transit services. The demonstration projects indicate that there is a niche market potential for jitney-type services in certain neighborhood areas, special attractors and at regional attractors such as large employment and commercial retail centers.

In Southern California cities, some form of limited jitney services appear to exist. These take the form of “bandit cabs.” What is known about these services is that they are neighborhood oriented, family operated and currently provide service to people that can not use existing public transit or commercial taxi /van services. Little operational information is available on these services primarily because they are “invisible under the existing regulatory environment” and because a large percentage of the operators may be illegal immigrants.

Implementation of this type of service is not without barriers, consisting of:

- ▶ state laws & local ordinances
- ▶ institutional relationships
- ▶ regulatory requirements
- ▶ safety issues

**Figure 5.5**



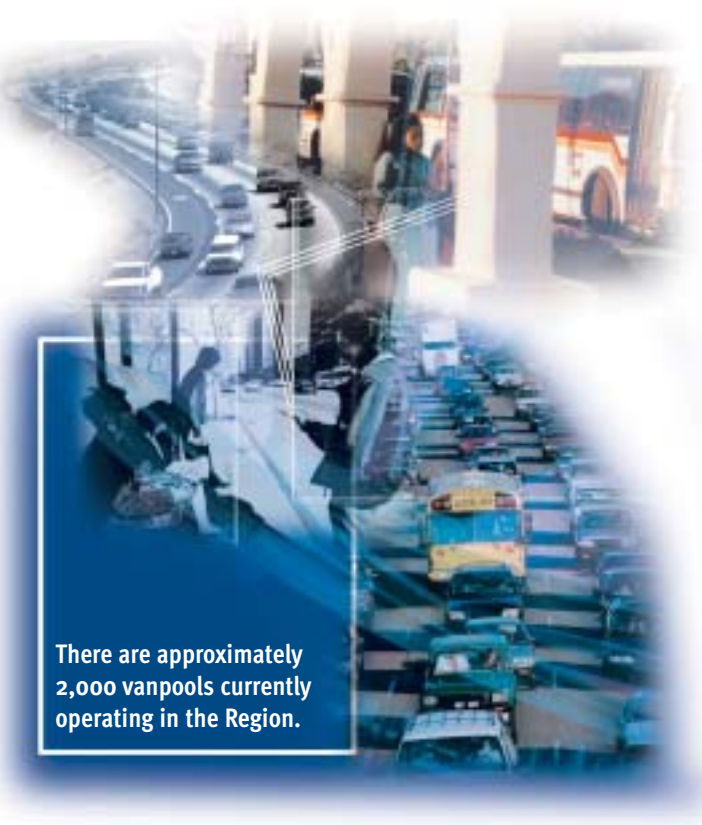


Currently jitney- and shuttle-type services are opposed by existing transit providers, both public and private. These services do not easily conform to local ordinances and state laws, the existing regulatory environment (local and PUC) and licensing requirements (drivers, insurance, etc.).

A full evaluation of jitney-type service(s) will be conducted in the next calendar year when funding is available.

### **Vanpools**

There are approximately 2,000 vanpools currently operating in the Region. While vanpooling is the mode choice for a small portion of the commuting population, the vehicle-miles-traveled reduced is significant given the long trip distances vanpools travel (35 miles average one-way trip distance) and the length of time members remain in their vanpool arrangement (average of 28 months). Vanpool programs are primarily operated by the private sector, thereby utilizing minimum subsidy.



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### **Advanced Traveler Information Systems (ATIS)**

Advanced Traveler Information Systems (ATIS) provide household and business customers with information that they can use 24 hours a day to make current and future decisions regarding the most favorable means, route and time for work, recreational and other trips. For the immediate and future trip, the traveler can obtain up-to-the-minute information on freeway, tollway and street congestion; times and speeds for alternate trip origins and destinations; and shuttle, bus, rail, plane and ship schedules, connections and costs. In addition, information is available on traffic accidents, incidents, alternative routes and weather.

This information can be obtained in many ways: radio and television, specific traveler-information telephone numbers, the Internet, WEB, kiosks in convenient public and work locations and in-vehicle devices. Information is available in different forms—orally and visually, in text, tables and maps.

Cities, counties, County Transportation Commissions, transit providers, subregional associations, Caltrans and private organizations are working together to develop data collection systems to process the data through public and private transportation management centers, and to deliver the information to travelers.

Through the Traveler Advisory News Network (TANN), the Southern California Economic Partnership (Partnership) currently provides “real time” traffic information as part of the Orange County Model Deployment, a current Partnership demonstration project for ATIS. The system also provides data on traffic incidents, transit schedules and itinerary planning. Through TANN affiliates, this data is available to digital communications “palm” devices, pagers and in-vehicle devices, as well as through Internet/intranet connections.

While the potential benefit of a well-thought-out ATIS system is obvious, much needs to be done to develop ATIS to reach travelers with information about alternatives before they make their mode choices.

### **Telecommuting/Work-at-Home**

The 2001 RTP assumes that 2.3% and 4.7% of all work trips would be reduced due to telecommute and work-at-home in 2010 and 2025 respectively. Based on SCAG’s State of the Commute Report, the rate of telecommuting has remained fairly constant— hovering at around 2 percent of all work trips. Yet, based on census data, work-at-home doubled between 1980 and 1990. While there is no empirical evidence that this growth rate can be sustained into the future, it is reasonable to

assume moderate future increases in work-at-home as well as telecommuting due to the infusion of technology into the workplace and the ease of communicating and working at nearly any location.



### **Alternative Work Schedules**

Alternative work schedules enable commuters to flex their hours at the workplace to avoid peak travel-time periods. In addition, commuters who opt to participate in a compressed work week schedule help to alleviate peak hour congestion by not reporting to the workplace on the days that they are off work.

Awareness of alternative work schedules (4/40, 9/80 and 3/36 schedules) by workers has remained fairly consistent throughout the 1990s. However, since 1994, participation in these programs has fallen by more than half. Participation by employees at sites with fewer than 200 employees is especially low.

### **TDM Support Facilities/Programs**

TDM support facilities /programs are essential components of the TDM strategies. The following paragraphs describe some of the key elements of these components.

### **Park-and-Ride Facilities**

Park-and-ride facilities are an essential component of the transportation system. Their objective is to provide a safe and convenient location for commuters to switch from single occupant vehicles to high occupancy modes such as bus, rail, carpools and vanpools.

The Region's park-and-ride system allows many commuters to park on a daily basis at designated hub locations and to transfer to express bus services or, in many cases, to vanpools and carpools. Notably, the daily use of the system varies tremendously across the Region, with some lots operating at over 100 percent capacity while others are less than 10 percent full. These drastic variations in use are due, in part, to deferred or substandard maintenance practices, lack of security and a simple lack of marketing to inform commuters of facility locations, restrictions and services. Addressing these issues is essential if the Region's park-and-ride system is to reach its maximum potential and continue to be an integral part of the Region's transportation infrastructure.

### **HOV Lanes Education and Public Outreach**

Significant investments have been made in developing our regional HOV lanes system. However, much can be done to educate the public on how to use it. HOV marketing activities should begin as early as possible in the project planning stages, peak at the time the project opens and continue over the life of the project. Moving individuals out of single occupancy vehicles requires a significant behavior change. It takes a long-term commitment involving interagency coordination and actions by public and private organizations, including the media.

### **Regional Guaranteed Ride Home Program**

Guaranteed Ride Home Programs (GRH), also called Emergency Ride Home Programs (ERH), have been implemented at numerous companies/agencies throughout the United States over the past 10-15 years. The programs provide a free ride home by taxi or rental car (specifics differ among programs) to encourage employees to rideshare because they often find that drivers fear getting trapped at work if an emergency comes up in the middle of the day, or if they have to work late.

As a result of the GRH programs, some solo drivers switch to a ridesharing or transit commuting alternative. Experience over the past ten years has shown that commuters rarely need to use the free ride option; its effectiveness lies in commuters' knowing that it is available. Nationwide, GRH programs have become recognized as highly cost-effective programs averaging 2-4 percent usage by the total population registered.

Currently, there is not a regional GRH program. However, Ventura County has a countywide program and some of the local Transportation Management Agencies and individual employers do offer programs. The Mobile Source Air Pollution Reduction Review Committee (MSRC) will be considering a potential pilot project in the next fiscal year.

### NON-MOTORIZED TRANSPORTATION

Biking and walking primarily constitute non-motorized transportation. Bikeways and pedestrian paths can play a significant role in meeting the transportation needs of our Region. Particularly, non-motorized transportation plays a bigger role in the densely populated, mixed land-use area or corridors.

The Region's bikeways encourage non-motorized commutes, serve as recreational facilities and provide inexpensive, environmentally-friendly transportation opportunities. More than 1,000 miles of Class I and II bikeways exist through the Region, as well as mountain bike trails, which are also designated for hiking and horseback riding. Class I bikeway has a right-of-way completely separated from any street or highway for bicycle travel. Class II bikeway has a striped lane for one-way bicycle travel on a street or highway. The City of Los Angeles alone has more than 500 miles of Class I and II bikeways.

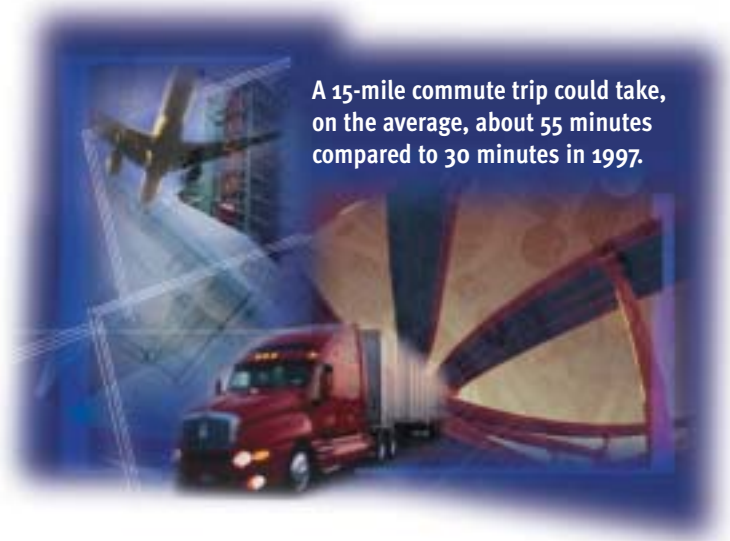
According to the 1990 Census, biking and walking accounted for approximately 0.7 and 3.0 percent of total work trips, respectively. SCAG's State of the Commute Report indicates that biking and walking have hovered around 0.5 and 1.5 percent, respectively, in the 1990s.

### STRATEGIC INVESTMENTS

It is clear that the opportunities to expand our transportation system to keep in pace with the projected growth is limited. While the population, employment and vehicle miles traveled (VMT) are expected to grow by more than 40 percent by the year 2025, our transportation network in terms of lane and route miles, on the other hand, is expected to increase by less than 10 percent. The constraints, both financial and environmental, to expanding our system capacity are substantial. Given this reality, the basic strategy used for investment in our transportation system can be summed up in the following guiding principles:

- ▶ Target capital improvement investments in projects that have the potential to maximize system capacity based on performance.
- ▶ Allocate adequate spending to operating and maintaining the system so that the system can continue to function effectively and efficiently.
- ▶ Optimize the utilization of the available system by promoting demand management strategies and other trip reduction strategies.

The individual components of the transportation plan described in the following section have been developed on this overall strategy. A complete list of projects proposed for investment is provided separately as an integral part of this document in the Technical Appendix. The following paragraphs briefly describe investment strategies by mode.



A 15-mile commute trip could take, on the average, about 55 minutes compared to 30 minutes in 1997.



## HIGHWAYS AND ARTERIALS

If we were to do nothing beyond completing committed (Baseline) projects by the year 2025, our freeway network mixed-flow lane capacity would increase by less than 10 percent and the arterial system would increase by about 7 percent (see Exhibit 5.3 for regionally significant Baseline projects). On the other hand, the HOV lane network will nearly double in terms of lane miles by 2025, thereby signifying the need to coordinate the Transportation Demand Management (TDM) strategies to ensure maximum utilization of our HOV system.

Under the Baseline scenario we could experience an increase in congestion delay, as a Region, of over 100 percent by the year 2025. The average speed on our freeway system, in the congested direction during the morning peak period, could deteriorate to about 16 miles per hour. The aggregated daily vehicle hours spent in the Region could increase by over 50 percent to 14 million hours and the delay hours could increase over 100 percent. A 15-mile commute trip could take, on the average, about 45 minutes compared to 30 minutes in 1997. The most congested corridors, such as the I-405, SR-91, I-5, US-101 and I-10 through the urban Region, will continue to get worse. The overall investment target is to provide maximum relief to the most heavily traveled commuter corridors.

### Highway and Arterial Investments

The 2001 RTP contains over \$15 billion in highway and arterial improvement projects in addition to already committed or programmed projects. This figure includes all capital improvements proposed on the highway and arterial network, including mixed-flow lanes, HOV lanes, interchanges, truck climbing lanes, truck lanes and grade crossings. The development of this component of the 2001 RTP was guided by the RTP Technical Advisory Committee (TAC).

Estimates indicate that additional arterial improvement needs total more than \$50 billion, in addition to the projects that are already identified in the 2001 RTP. This unconstrained list is far beyond the available public funds in the Region over the Plan's time frame. Arterial and interchange improvements in addition to those included in the Baseline will be eligible for programming when future funding becomes available and are subject to their performance relative to SCAG's Performance Indicators. The 2001 RTP proposes almost \$3 billion in new expenditures for arterials based on performance, in addition to specific arterial improvement projects identified as part of the constrained plan.

The highway projects identified in the Governor's Traffic Congestion Relief Plan (TCRP) can be viewed mostly as capacity enhancement projects. These projects are included as part of the Baseline for the 2001 RTP. The Governor's plan devotes \$948 million to highway-related projects, about 41 percent of the total spending proposed. The most notable of these are HOV gap closures on Interstates 405, 10, 5 and 215 as well as State Routes 91, 60 and 22. All of these projects were identified in the 1998 RTP as either Baseline or constrained plan projects. Mixed-flow, auxiliary lane, interchange improvement and signal improvement projects are also proposed in the TCRP and are consistent with the 1998 RTP.

# 2025 Regionally Significant Baseline Projects

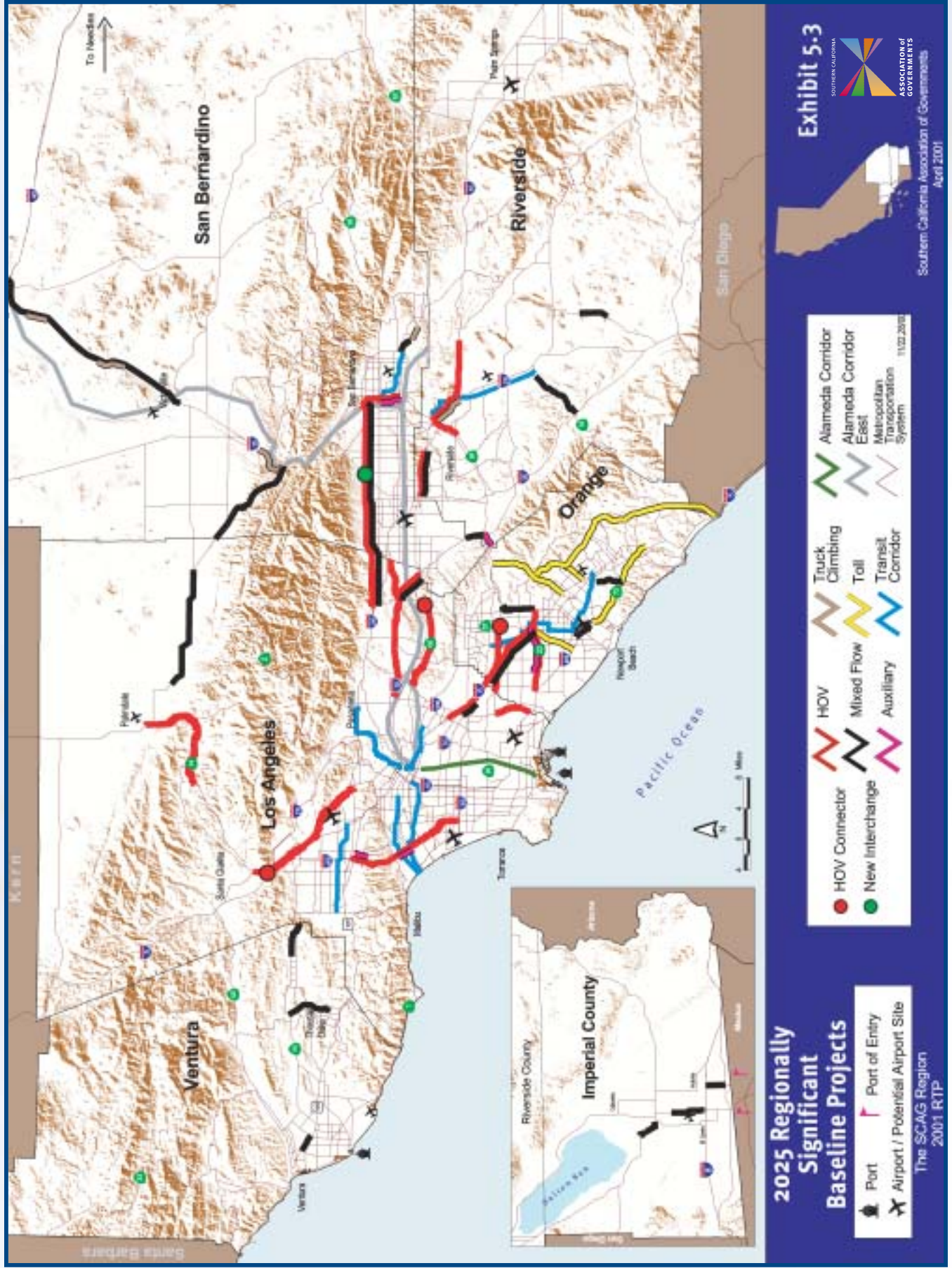


Table 5.2

HOV PROJECTS			
Project	Implementation Schedule	County	Project Development Requirement/Status
I-405 NB (US-101 to Burbank Blvd)	2010	Los Angeles	PSR Needed
I-710 (I-10 to Huntington Dr)	2010	Los Angeles	PSR Needed
I-710 (Huntington Dr to I-210)	2020	Los Angeles	PSR Needed
SR-14 (Ave P-8 to Ave-L)	2015	Los Angeles	PSR Needed
I-5 (SR-1 to Avenida Pico)	2020	Orange	PSR Needed
I-15 (San Bernardino Co to SR-91)	2020	Riverside	PSR Needed
I-215 (SR-60/I-215/SR-91 to San Bernardino Co)	2020	Riverside	PSR Needed
I-215 (I-15 to s/o Nuevo)	2025	Riverside	PSR Needed
I-215 (Ramona Exwy to East Jct SR-60/I-215)	2025	Riverside	PSR Needed
SR-71 (San Bernardino Co to SR-91)	2015	Riverside	PSR Needed
I-10 (I-15 to Yucaipa)	2020	San Bernardino	PSR Needed
I-10 (Yucaipa to Riverside Co)	2025	San Bernardino	PSR Needed
I-15 (Riverside Co to I-215)	2025	San Bernardino	PSR Needed
I-15 (I-215 to D St)	2020	San Bernardino	PSR Needed
I-215 (Riverside Co to I-10)	2010	San Bernardino	PSR Needed
I-215 (SR-30 to I-15)	2025	San Bernardino	PSR Needed

Note: Typically, Project Study Reports (PSR) must be completed for these projects in order to compete in the Call for Projects for the RTIP.

The total investment proposed for HOV completion is \$1.2 billion. The Baseline projects are listed only in the Appendix.

Strategic capacity improvements can be combined with improved management of the regional freeway system and peak period travel demand-reduction strategies to effectively meet the Region's travel needs. The Region needs additional innovative capacity enhancements, but as always, innovations must meet a benefit-cost test.

Major categories of the proposed improvements for Highway and Arterials in the 2001 RTP include HOV gap closures, HOV connectors, mixed-flow improvements, toll lanes and high occupancy toll lanes as well as strategic arterial improvements. The 2001 RTP is based on input from the 1998 RTP, and priorities submitted by the county commissions and the subregions. The following provides a brief description of individual categories of improvements proposed in the Plan.



## HOV Gap Closure

The completion of the HOV system will be an important step towards meeting future travel demand. A number of HOV projects proposed in the 1998 RTP have already been programmed in the current RTIP. The following table provides a summary of HOV gap closure projects proposed in the 2001 RTP beyond the Baseline that are regionally significant.

## HOV Connectors

HOV connectors are an important element of the regional HOV system. The connectors are constructed with drop ramps to the HOV lane along the freeway median to minimize weaving conflicts and maintain speeds. A number of HOV connectors are identified in the 2025 Baseline. The 1998 RTP identified two additional HOV freeway-to-freeway connector projects. While the cost-effectiveness of HOV connectors appears questionable on a project-by-project basis, some investments in HOV connectors are justified by overall system performance. The following table provides a summary of HOV connector projects identified in the 2001 RTP as part of the constrained projects beyond the Baseline.

Table 5.3

HOV CONNECTOR PROJECTS			
Project	Implementation Schedule	County	Project Development Requirement/Status
I-5 / SR-170	2025	Los Angeles	PSR Needed
I-5 / I-405	2025	Los Angeles	PSR Needed
SR-22 / I-5	2025	Orange	In Environmental
SR-22 / SR-55	2025	Orange	In Environmental
SR-22 / I-405	2010	Orange	In Environmental
I-405 / I-605	2010	Orange	In Environmental
SR-60 / I-215 E Jct east to SR-60	2010	Riverside	PSR Completed/PAED Pending
SR-60 / I-215 E Jct south to I-215	2025	Riverside	PSR Needed
I-10 / I-215	2025	San Bernardino	PSR Needed
I-10 / I-15	2025	San Bernardino	PSR Needed

The total investment proposed for HOV connectors is \$461 million. The Baseline projects are listed only in the Appendix.

## Mixed Flow

Gaps in the freeway network create traffic bottlenecks during peak use. Several new mixed-flow freeway lanes are proposed to close gaps, increase capacity in certain congested commuter corridors and address county-to-county travel, especially from population-rich to employment-rich areas. Several routes are under consideration in the Four Corners area, where Los Angeles, Orange, Riverside and San Bernardino counties converge. SCAG, Caltrans and Riverside and



# 2025 Baseline Freeway Congestion

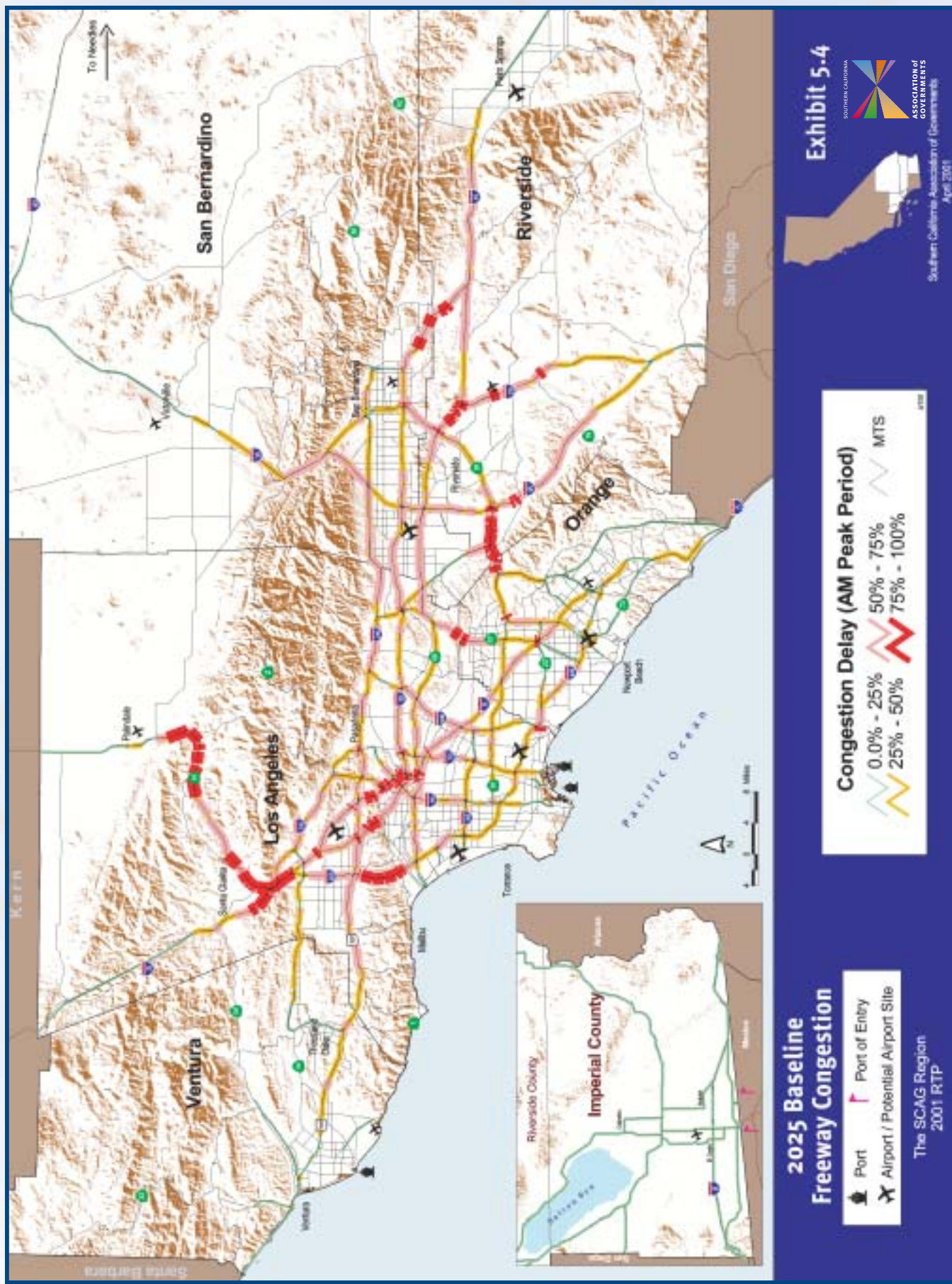


Table 5.4

MIXED-FLOW PROJECTS			
Project	Implementation Schedule	County	Project Development Requirement/Status
SR-111 (SR-98 to I-8)	2010	Imperial	PSR Needed
SR-115 (Evan Hewes to SR-78)	2010	Imperial	PSR Needed
I-5 (Rosecrans to Orange Co)	2010	Los Angeles	PSR Needed
I-5 Ultimate—Interchanges from Orange Co to Rosemead Blvd	2025	Los Angeles	PSR Needed
I-710 (I-10 to Huntington Dr)	2010	Los Angeles	PSR Needed
I-710 (Huntington Dr to I-210)	2020	Los Angeles	PSR Needed
SR-57 / SR-60 Interchange	2025	Los Angeles	PSR Needed
SR-57 (auxiliary lanes Los Angeles Co to SR-22)	2010	Orange	PSR Needed
SR-91 (westbound auxiliary lane SR-57 to I-5)	2020	Orange	PSR Needed
SR-91 (auxiliary lanes SR-241 to SR-71)	2025	Orange	PSR Needed
I-10 (Monterey to Dillon)	2010	Riverside	PSR Needed
I-15 (SR-91 to SR-60)	2020	Riverside	PSR Needed
I-215 (Eucalyptus to Columbia)	2025	Riverside	PSR Needed
I-215 (I-15 to s/o Nuevo)	2025	Riverside	PSR Needed
SR-71 (San Bernardino Co to SR-91)	2015	Riverside	PSR Needed
I-215 (I-10 to SR-30)	2010	San Bernardino	PSR Needed
I-215 (SR-30 to I-15)	2025	San Bernardino	PSR Needed
SR-30 (Highland to I-10)	2020	San Bernardino	PSR Needed
SR-58 (Kern Co to I-15)	2010	San Bernardino	PSR Needed
US-395 (I-15 to n/o Desert Flower Rd)	2020	San Bernardino	PSR Needed
SR-118 (Tapo Cyn to New LA Ave)	2015	Ventura	PSR Needed

The total investment proposed for mixed-flow improvements is \$5.4 billion, including new corridors. The Baseline projects are listed only in the Appendix.

Orange counties are exploring methods to approach new corridor development in an environmentally sensitive manner. Most of these projects are proposed for inclusion in the 2001 RTP. Regionally significant mixed-flow improvements, proposed in the 2001 RTP beyond the Baseline projects, are shown in Table 5.4.

### Toll Lanes and HOT Lanes

New HOT lane facilities include expanded capacity parallel to SR-91 to address east /west congestion in the Riverside County area. While additional work is in progress through the CETAP process to identify and study the feasibility of specific alignments in this corridor, this Plan acknowledges the need for additional capacity in this corridor.

**Table 5.5**

TOLL CORRIDOR PROJECTS			
Project	Implementation Schedule	County	Project Development Requirement/Status
SR-241 to Riverside Co	2010	Orange	PSR Needed
Orange Co to I-15	2010	Riverside	PSR Needed

The total investment proposed for toll corridor projects is \$300 million in public funding and \$1.3 billion in private funding. The Baseline projects are listed only in the Appendix.

### Community and Environmental Transportation Acceptability Process (CETAP)

Agencies involved with surface transportation projects needing FHWA and FTA action under the National Environmental Policy Act (NEPA) are expected to sign a memorandum of understanding (MOU) in conjunction with Section 404. (The Federal Clean Water Act, Section 404, requires a US Army Corps of Engineers permit for discharge of dredged or fill material into waters of the United States.) Agencies signing this MOU are committed to integrating NEPA and Section 404 in their transportation planning, programming and implementation of such projects so as to avoid adverse impacts to waters of the United States and to sensitive, threatened and endangered species therein. SCAG executed such an MOU in December 1993 between various local, regional, state and federal agencies, which will be followed vis a vis any proposed toll roads or any other projects covered under Section 404.

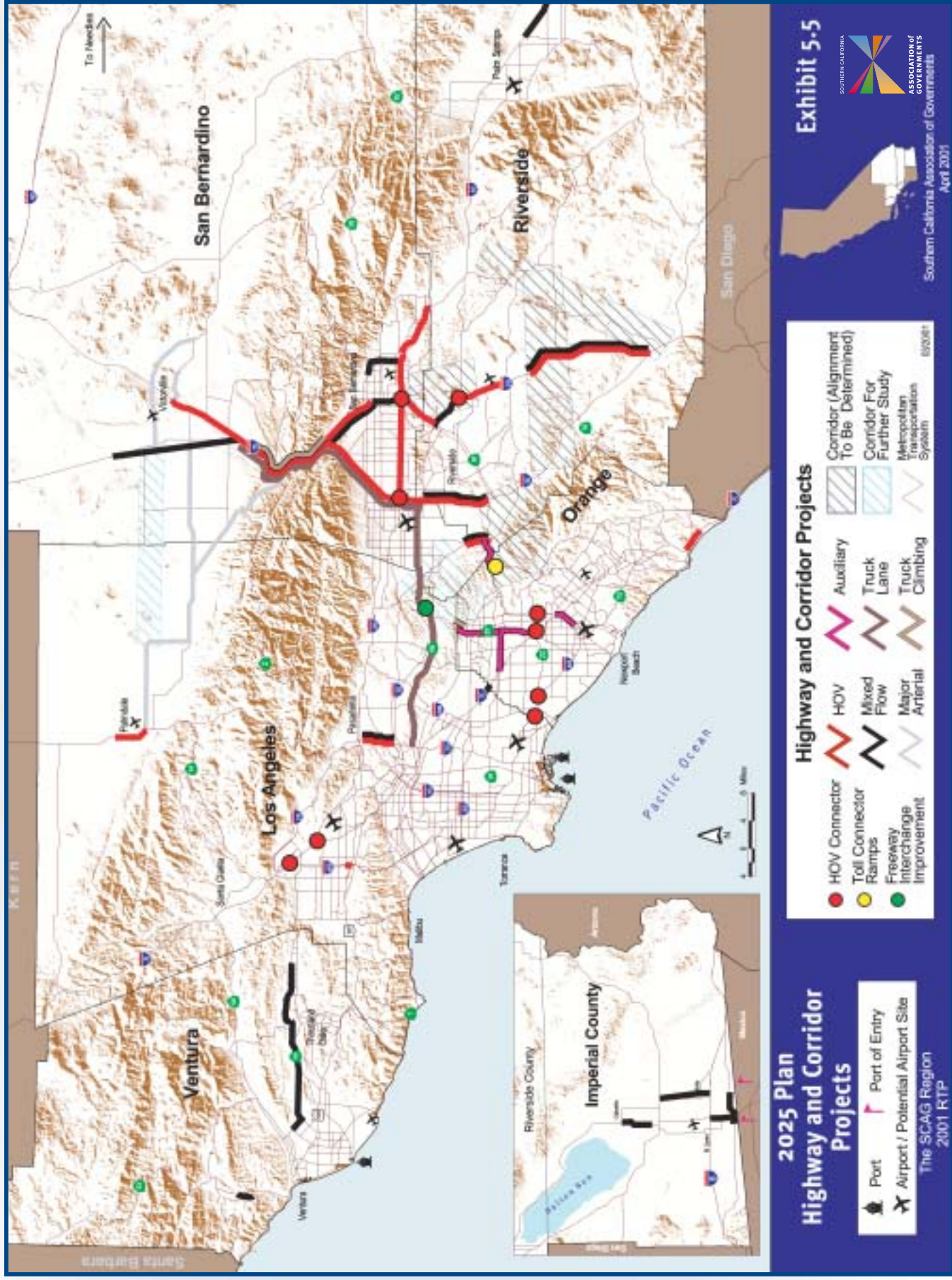
CETAP is one part of a three-part planning and implementation program called the Riverside County Integrated Project (RCIP), being undertaken by the County of Riverside and the Riverside County Transportation Commission (RCTC). The other two parts are the developing of a Multi-Species Habitat Conservation Plan (MSHCP) and a new county General Plan. The CETAP is designed to address a comprehensive and interrelated analysis of transportation needs, environmental considerations and land-use options. A central purpose of the CETAP process in Riverside County is to examine the need and opportunities for the development of new or expanded transportation corridors in western Riverside County.

### Strategic Arterial Improvements/Smart Street Improvements

Arterial roads account for over 65 percent of the total road network and already carry over 50 percent of total traffic. As it becomes more difficult to add lanes to existing freeways or build new freeways, maximizing the potential capacity of arterials becomes an attractive option to increase overall system capacity in already-developed areas. The Strategic Arterial Improvement concept could involve a combination of widening, signal prioritization and other Intelligent Transportation Systems (ITS) deployment and grade separation at critically high-volume intersections to enhance the flow speed and capacity of the arterial. Such improvements could increase capacity of an arterial facility by as much as 50 percent at a relatively modest cost of \$3 to \$5 million per mile. A number of arterial corridors have been identified for such improvements in the proposed Plan, located mostly in Orange and Riverside counties.



# 2025 Plan Highway and Corridor Projects





The following table provides a list of Smart Street Improvements included in the 2001 RTP beyond the Baseline.  
**Table 5.6**

SMART STREET PROJECTS			
Project	Implementation Schedule	County	Project Development Requirement/Status
<b>SR-133 Laguna Canyon Rd</b>	2010	<b>Orange</b>	Feasibility Study Needed
<b>Adams Ave</b>	2010	<b>Orange</b>	Feasibility Study Needed
<b>Bolsa Ave/First St</b>	2010	<b>Orange</b>	Feasibility Study Needed
<b>Crown Valley Pkwy</b>	2010	<b>Orange</b>	Feasibility Study Needed
<b>El Toro Rd</b>	2010	<b>Orange</b>	Feasibility Study Needed
<b>Harbor Blvd</b>	2010	<b>Orange</b>	Feasibility Study Needed
<b>Irvine Blvd/Trabuco Rd</b>	2010	<b>Orange</b>	Feasibility Study Needed
<b>Jamboree Rd</b>	2010	<b>Orange</b>	Feasibility Study Needed
<b>Newport Blvd</b>	2010	<b>Orange</b>	Feasibility Study Needed
<b>Orangethorpe Ave</b>	2010	<b>Orange</b>	Feasibility Study Needed
<b>Pacific Coast Hwy</b>	2010	<b>Orange</b>	Feasibility Study Needed
<b>Tustin Ave/Rose Dr</b>	2010	<b>Orange</b>	Feasibility Study Needed
<b>Valley View St</b>	2010	<b>Orange</b>	Feasibility Study Needed
<b>Warner Ave</b>	2010	<b>Orange</b>	Feasibility Study Needed
<b>Hamner Ave/Main St</b>	2015	<b>Riverside</b>	Feasibility Study Needed
<b>Limonite Ave/Rubidoux Blvd</b>	2020	<b>Riverside</b>	Feasibility Study Needed
<b>Magnolia Ave/Main St</b>	2015	<b>Riverside</b>	Feasibility Study Needed

The total investment proposed for Smart Street improvements is \$390 million.

### Arterial Improvements

In addition to the specific arterial improvements identified under the Smart Street Improvement Program, this Plan proposes a significant increase in funding for arterial improvements and capacity enhancements (see Table 5.7). Even with the increased funding, the total cost of the arterial improvements identified by the subregions far exceeds available funds.

A complete list of eligible arterial improvements is contained in the Technical Appendix. For implementation purposes, the implementing agencies will have the discretion to prioritize arterial improvements from this list based on performance criteria, to the extent that the allocated funding is available. For the purposes of evaluating the performance of the 2001 RTP as a constrained multi-modal system, arterial improvements were used within the available funding capacity as identified in the Plan.

### Maintaining and Optimizing the Existing System (Operations and Maintenance)

With the current backlog of highway and arterial maintenance and the pavement deterioration that goes with an aging roadway system, costs will increase dramatically through the RTP horizon year to keep the highway system operational. The 2001 RTP identifies additional funds, principally for arterials, to minimize roadway and bridge decay. Recent studies

**Table 5.7**

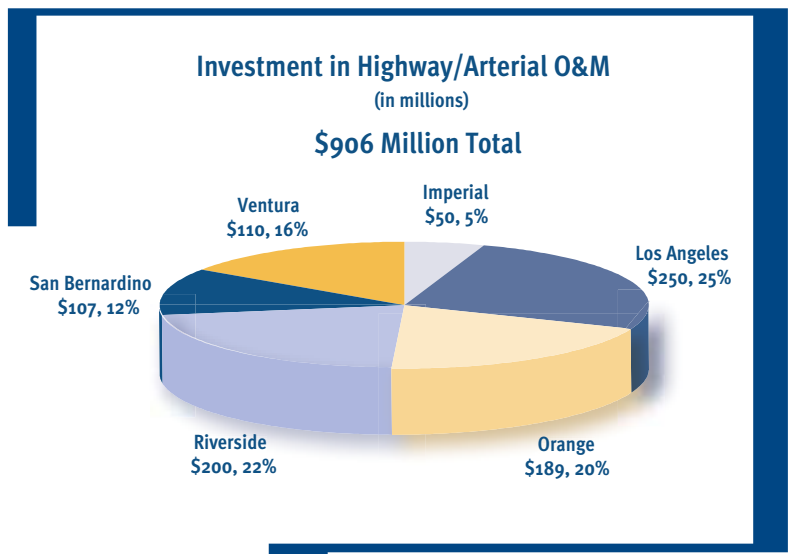
INVESTMENT IN ARTERIALS (IN MILLIONS)	
County	Investment
Imperial	\$194
Los Angeles	\$488
Orange	\$565
Riverside	\$400
San Bernardino	\$607
Ventura	\$135
<b>Regional Total</b>	<b>\$2,389</b>

have also identified an increased cost to drivers as under-maintained roadways degrade tires and shock absorbers, creating wear and tear on engines and connections throughout a vehicle. Providing additional funding to improve pavement conditions before roadbed deterioration requires full rehabilitation would result in substantial maintenance savings to the Region.

Preliminary analysis indicates that investment in proper ongoing maintenance would pay dividends of more than triple the cost. The funding estimates for the 2001 RTP call for a \$63 billion investment in operations and maintenance of the existing system (including transit) and the Baseline projects, which is a \$25 billion increase over the 1998 RTP. Additional O&M funding, beyond maintaining the existing system in the Plan, could also include signifi-

cant improvements such as signal replacements and upgrades, traffic detection improvements, integration and computer control of signal systems, optimization of turning movements and other means of maintaining or enhancing operations of the existing system, as prioritized by the implementing agencies. Additional O&M funding is summarized by each county in Figure 5.6.

**Figure 5.6**



### Soundwalls

Soundwalls is a regional issue associated primarily with freeway improvements. Federal and state laws require construction of noise barriers along freeways under the Community Noise Abatement Program and as part of new freeway

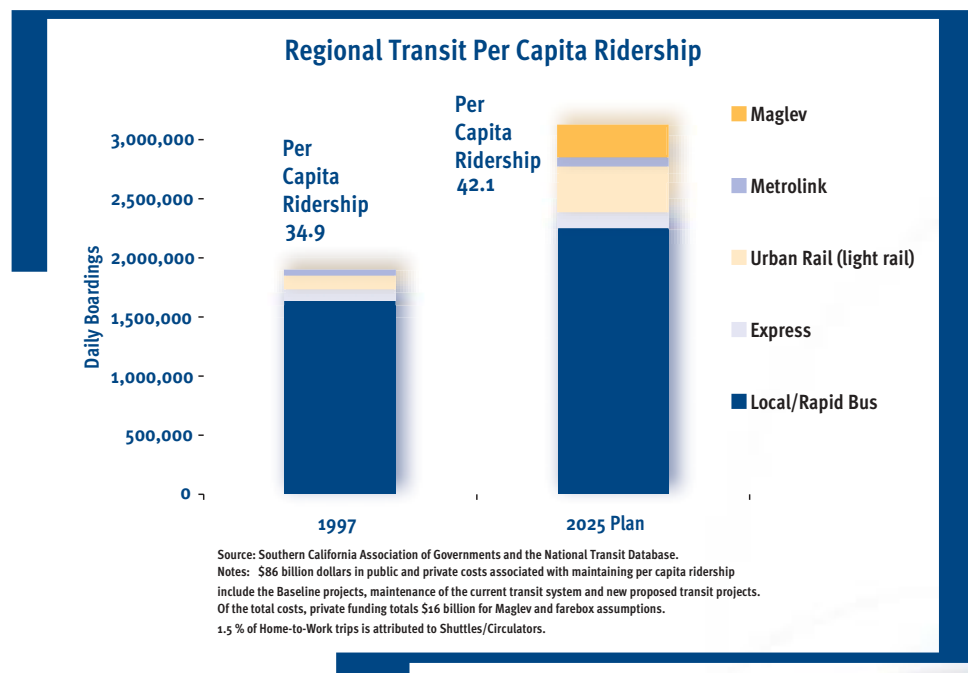
construction projects and freeway widening /capacity enhancement projects on existing freeways. Although a separate funding category for soundwalls is not proposed in the 2001 RTP, the Plan acknowledges the need. All funding needs identified for freeway expansions and improvements include costs for retrofit soundwalls.

### REGIONAL TRANSIT

The primary focus of the 1998 RTP's transit program was the cost and delivery of bus service. Smart Shuttles were seen as the solution to these cost /delivery issues, but it has since been recognized that these estimates were overly optimized and applications somewhat limited. However, several fundamental transit policy questions warrant future research and analysis:

- ▶ How should this Region continue to fund transit services?
- ▶ Should the primary focus of regional transit be to provide a “social safety net” level of service?
- ▶ Would other transit investment strategies be more cost-effective and provide better service quality?
- ▶ Should these strategies be pursued if implementation would require changing the way transit funding is allocated and/or require significant changes to the existing institutional structures that fund, deliver and operate transit services?
- ▶ Should the Southern California Region adopt a single alternative fuel standard for transit vehicles?

**Figure 5.7**



SCAG's Transportation and Communications Committee (TCC) was presented with ridership scenarios developed by the Regional Transit Task Force that would either work towards doubling transit ridership or maintaining the 1997 per capita ridership level. TCC adopted, as a goal, to maintain 1997 per capita ridership levels. This equates to 34.9 transit

trips per person per year. The SCAG Region's population is projected to increase by 40 percent by 2025. This would equal approximately 800 million new annual transit trips in the Region (see Figure 5.7).

To implement the 1997 per capita maintenance scenario, approximately 8,000 transit vehicles, new and replacement, would need to be purchased over the Plan period. The Task Force realized, however, that increasing the regional transit fleet alone will not be successful, is not cost-effective and would not improve overall performance in and of itself. Transit enhancement actions, in coordination with growth and development, will improve both system performance and person access.

Implementation of these complementary actions on selected transit corridors, adopted by the Transit Corridor Task Force and /or submitted by the County Transportation Commissions, could significantly increase regional transit ridership. In some cases, these enhancements alone could be implemented for little or no cost (capital or operating) and improve transit service capacity by as much as 15 percent. Current examples can be found on the Wilshire and Ventura Boulevard Rapid Bus demonstration projects. During July of 2000, as a result of new rapid bus routes, Metro Bus ridership reached its highest point in more than six years, averaging 1,253,931 boarding patrons, compared to 1,041,045 carried a year earlier.

## Regional Transit Investments

Public transportation services comprise a major portion of the Regional Mobility Strategy. The goal of public transportation services is to provide an attractive alternative to the use of a single occupant automobile for discretionary riders and to provide needed transportation to people who do not own or operate cars. Public transportation strategies and programs have been developed with these goals in mind.

Table 5.8

BASELINE TRANSIT CORRIDOR PROJECTS				
County	Corridor	Project Limits	Description	Completion Schedule
Los Angeles	Wilshire Blvd	Santa Monica to Montebello	Rapid Bus/Busway Hybrid	2005
	Ventura Blvd	Warner Center to Universal Station	Rapid Bus	2001*
	Exposition	Downtown LA to Santa Monica	Light Rail/ Busway Hybrid	2010
	Pasadena Line	Downtown LA to Sierra Madre	Light Rail	2003
	Eastside	Union Station to Beverly/Atlantic	Light Rail	2006
	San Fernando Valley East/West	N. Hollywood Red Line Station to Warner Center	Busway	2005
OC	CenterLine	Fullerton Transp. Center to Irvine Transp. Center	Light Rail	2010
RV	San Jacinto Commuter Rail	12th & Vine to 4th & D St (Riverside to Perris)	Commuter Rail	2010
SB	Redlands	4th St/Vernon to Grove/Central	Rail Technology TBD	2010

\*A previous demonstration project